

REL Southwest Ask A REL Response

Literacy

May 2018

Question:

Is there evidence to support the use of IStation to enhance reading in students with dyslexia?

Response:

Thank you for the question you submitted to our REL Reference Desk. We have prepared the following memo with research references to help answer your question. For each reference, we provide an abstract, excerpt, or summary written by the study's author or publisher. Following an established Regional Educational Laboratory (REL) Southwest research protocol, we conducted a search for research reports as well as descriptive study articles on the use of IStation to enhance reading in students with dyslexia.

We have not evaluated the quality of references and the resources provided in this response. We offer them only for your reference. Also, we searched the references in the response from the most commonly used resources of research, but they are not comprehensive, and other relevant references and resources may exist. References provided are listed in alphabetical order, not necessarily in order of relevance. We do not include sources that are not freely available to the requestor.

Research Reference

Luo, T., Lee, G.-L., & Molina, C. (2017). Incorporating IStation into early childhood classrooms to improve reading comprehension. *Journal of Information Technology Education: Research*, 16, 247–266. <https://eric.ed.gov/?id=EJ1151099>

From the ERIC abstract: “Aim/Purpose: IStation is an adaptive computer-based reading program that adapts to the learner's academic needs. This study investigates if the IStation computer-based reading program promotes reading improvement scores as shown on the STAR Reading test and the IStation test scaled scores for elementary school third-grade learners on different reading levels. Background: Prior literature provided a limited evidence base for incorporating computer-adaptive learning technologies to improve reading comprehension in the context of early childhood education. Methodology: Using a mixed-method case study research approach, this study purports to investigate the effects of IStation and examine the perspectives of teachers and students. Supported by survey and interview data, this case study employed a sample of 98

public school third-grade students in an urban elementary school in the southeastern United States as well as the three classroom teachers. Findings: The results of this study show a strong correlation between the usage of IStation and the rise of STAR reading scores during the time IStation was integrated. There were differing opinions regarding the effectiveness of IStation between students and teachers, as well as between low and high achieving students. Teachers recognized that intervening variables of teachers' whole and small group lessons individualized for each class, as well as students' practice sessions both at home and at school, could have also resulted in improved STAR reading scores. Recommendations for Practitioners: There is no one-size-fits-all solution when implementing such technology to a diverse array of learners on different reading levels, such as Tier 1 (high reader), Tier 2 (medium average benchmark reader), and Tier 3 (low reader). It is essential to provide professional development and training opportunities for teachers. Teachers can also train and elevate the higher achieving students with using IStation to monitor their own progress as well as set their own individual learning goals. Recommendation for Researchers: We recommend studies with a larger sample size that would likely yield more definitive and generalizable results, studies using a randomized control group that would have teased out extraneous factors and truly measuring the effects of IStation alone on STAR, as well as longitudinal studies examining the long-term effects of IStation. Contribution: This study has provided a) additional data to show evidence for the effectiveness of a computer-based reading program, IStation, by using the students' and teachers' viewpoints as well as reading comprehension test scores data; and b) recommendations for practitioners and researchers regarding professional development for IStation implementation."

Additional Organization to Consult

Istation - <https://www.istation.com/Studies>

From the website: "Istation's Super 7 Essentials—formative assessments, adaptive curriculum, personalized data files, teacher resources, school-to-home connection, professional development, and proven results—provide the educational technology and tools schools needed for powerful blended learning for pre-K – 8."

In this "Studies" section of the website, validity and effectiveness studies, white papers, and technical reports are available in PDF form.

Methods

Keywords and Search Strings

The following keywords and search strings were used to search the reference databases and other sources:

- Istation
- Educational technology
- Computer adaptive learning technologies
- Computer-assisted learning

- Technology + uses in education
- Computer assisted instruction + Istation
- Computer adaptive learning technologies + dyslexia
- Dyslexia + Istations
- Dyslexia + computer-assisted learning

Databases and Resources

We searched ERIC for relevant peer-reviewed references. ERIC is a free online library of more than 1.6 million citations of education research sponsored by the Institute of Education Sciences (IES). Additionally, we searched Google Scholar and PsychInfo.

Reference Search and Selection Criteria

When we were searching and reviewing resources, we considered the following criteria:

- *Date of the publication:* References and resources published from 2003 to present were included in the search and review.
- *Search priorities of reference sources:* Search priority is given to study reports, briefs, and other documents that are published and/or reviewed by IES and other federal or federally funded organizations, academic databases, including ERIC, EBSCO databases, JSTOR database, PsychInfo, PsychArticle, and Google Scholar.
- *Methodology:* The following methodological priorities/considerations were given in the review and selection of the references: (a) study types—randomized control trials, quasi-experiments, surveys, descriptive data analyses, literature reviews, policy briefs, and so forth, generally in this order; (b) target population, samples (representativeness of the target population, sample size, volunteered or randomly selected, and so forth), study duration, and so forth; and (c) limitations, generalizability of the findings and conclusions, and so forth.

This memorandum is one in a series of quick-turnaround responses to specific questions posed by stakeholders in the Southwest Region (Arkansas, Louisiana, New Mexico, Oklahoma, and Texas), which is served by the Regional Educational Laboratory (REL) Southwest at AIR. This memorandum was prepared by REL Southwest under a contract with the U.S. Department of Education’s Institute of Education Sciences (IES), Contract ED-IES-91990018C0002, administered by AIR. Its content does not necessarily reflect the views or policies of IES or the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.